UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/937,057	02/26/2002	Antoine F Carpentier	249326USOX PCT	4658

22850 7590 06/06/2008

OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER	
ZARA, JANE J	
ART UNIT	**PAPER NUMBER**
1635	

NOTIFICATION DATE	DELIVERY MODE
06/06/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com
oblonpat@oblon.com
jgardner@oblon.com

Office Action Summary	Application No.	Applicant(s)	
	09/937,057	CARPENTIER, ANTOINE F	
	Examiner	Art Unit	
	Jane Zara	1635	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 March 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *70-93* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *70-76, 78- 93* is/are rejected.

7)☒ Claim(s) *77* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This Office action is in response to the communication filed 3-5-08.

Claims 70-93 are pending in the instant application.

Election/Restrictions

This application contains SEQ ID Nos. 18, 19 and 47, drawn to an invention nonelected with traverse in the reply filed on 5-16-08 (comprising only SEQ ID NOs. 9, 10, 16, 21, 31, 33, 34, 35 and 37). A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Applicant argues that since SEQ ID Nos. 18, 19 and 47 are now in claim 77, and claim 77 depends from an independent claim from the originally elected Group I, these additional sequences should also be examined.

Contrary to Applicant's assertions, additional sequences added later in prosecution are not automatically examined because they are incorporated into a claim that depends from an originally elected Group. The sequences are chemically, functionally, and structurally different and distinct from the previously elected sequences and one sequence does not render the other obvious. Searching of all of the sequences added during prosecution, and after substantive examination has begun, would indeed pose an undue burden on the Examiner and the USPTO facilities. A search of the other sequences (SEQ ID Nos. 9, 10, 16, 21, 31, 33, 34, 35, and 37) would not necessarily be coextensive with other sequences added to the claims during

prosecution, although the searches may overlap. For these reasons, the instant restriction requirement is maintained.

Response to Arguments and Amendments

Withdrawn Rejections

Any rejections not repeated in this Office action are hereby withdrawn.

Rejections Necessitated by Amendments

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 70-73, 78, 89, 92 are rejected under 35 U.S.C. 102(e) as being anticipated by Mitchell et al (USPN 6,280,978).

Mitchell et al (USPN 6,280,978) teach a composition comprising a stabilized oligodeoxyribonucleotide consisting of 20-100 bases, comprising at least one nonmethylated octameric CG motif of the sequence AACGTTAT, which composition further comprises a pharmaceutically acceptable carrier (see SEQ ID NO. 6, see esp. col. 18 lines 53-55).

Claims 70-75, 78-90, 92 and 93 are rejected under 35 U.S.C. 102(e) as being anticipated by Krieg et al (USPN 6,218,371).

Krieg teaches compositions for treating nervous system and other cancers comprising the administration of a pharmaceutical composition comprising an oligonucleotide between 20-100 nucleobases, comprising at least one octameric, unmethylated CpG motif of the sequence AACGTTAT, and which oligonucleotide further comprises phosphorothioate internucleotide linkages, is single or double stranded, comprises deoxyribonucleotides, and is optionally coupled to a molecule that increases the affinity to a tumor, and which compositions further comprise a colloidal dispersion system including an encapsulating agent, or comprising a polymer (see entire document, esp. col. 1-4; 6-9; 19; 22-23; claims 1, 5, 8, 17-20 and 23; SEQ ID NO. 49).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

> invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 70-76, 78- 93 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krieg et al (USPN 6,218,371) as applied to claims 70-75, 78-90, 92 and 93 above, and further in view of Schwartz et al (USPN 6,562,798).

Krieg et al (USPN 6,218,371) is relied upon as cited in the 102 rejection above.

Krieg does not teach oligonucleotides comprising 5-bromo cytosine residues.

Schwartz (USPN 6,562,798) teaches compositions comprising immunomodulatory oligonucleotides comprising the motif 5' purine-purine-CpG-pyrimidine-pyrimidine 3' which are single or double stranded and which are deoxyribonucleotides, which oligonucleotides optionally further comprise 5-bromocytosines and phosphorothioate modifications for enhancing stability and immunomodulatory capabilities, and which compositions additionally comprise colloidal dispersions systems, encapsulating agents, polymers and affinity moieties for enhancing target cell uptake, and pharmaceutically acceptable carriers (see entire

document, esp. abstract, col. 4, 8-12, col. 25, including Table 1, claims 1, 9-13, 16-19, 23-24, 42, 51, 61 and 67).

It would have been obvious to one of ordinary skill in the art to design immunomodulatory oligonucleotide AACGTTAT because the basic motif comprising 5' purine-purine-CpG-pyrimidine-pyrimidine 3', comprising unmethylated CpG's, was well known in the art to produce immunomodulatory effects in organisms and Krieg taught immunostimulatory oligonucleotides comprising this sequence, AACGTTAT

One of ordinary skill in the art would have found it obvious to incorporate the well known modifications including phosphorothioate internucleotide linkages and 5-bromo cytosine into the oligoncucleotide comprising the motif AACGTTAT because the technology to do so was well known in the art and these modifications were known to enhance oligonucleotide stability and immunomodulatory activity of CpG containing oligonucleotides, as taught previously by Schwartz. One of ordinary skill in the art would have been motivated to compose the compositions with the components claimed, including colloidal dispersion systems and cell targeting agents because these were well known in the art to enhance target cell uptake in vitro and in vivo and one of ordinary skill in the art would have expected these compositions to be useful for enhancing oligonucleotide uptake by target cells. It would have been obvious to increase the number of immunomodulatory motifs in an oligonucleotide to enhance the immunomodulatory capability of oligonucleotides bearing this minimal motif comprising AACGTTAT, as taught previously by Krieg, because these CpG motifs, existing either singly or multiply within an immunostimulatory oligonucleotide, were well known to

provide for additive immunomodulatory capabilities in vivo at the time the instant invention was made.

For these reasons, the instant invention would have been obvious to one of ordinary skill in the art at the time the invention was made.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 84-88 and 93 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 3, 4, 6-9 of U.S. Patent No. 7,108,844 for the reasons of record set forth in the Office action mailed 10-5-07.

Applicant's arguments filed 3-5-08 have been fully considered but they are not persuasive. Applicant argues that the difference in scope between the instant claims

and claims 1, 3, 4, 6-9 of U.S. Patent No. 7,108,844 render them patentably distinct and therefore the instant rejection is improper.

Contrary to Applicant's assertions, the instant claims and claims 1, 3, 4, 6-9 of U.S. Patent No. 7,108,844 are both drawn to methods of treating cancers in a subject comprising the administration of compositions comprising an immunomodulatory oligonucleotide between 20-100 nucleobases in length and comprising SEQ ID No. 51, which encompasses the sequence AACGTTAT of the instant application.

Claim Objections

Claim 73 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim, claim 70. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Allowable Subject Matter

Claim 77, drawn to SEQ ID Nos. 9, 10, 16, 21, 31, 33, 34 and 35, appears free of the prior searched and of record. Claim 77 is objected to for including non-elected sequences (SEQ ID Nos. 18, 19 and 47), and for depending from a rejected claim.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Certain papers related to this application may be submitted to Art Unit 1635 by facsimile transmission. The faxing of such papers must conform with the notices published in the Official Gazette, 1156 OG 61 (November 16, 1993) and 1157 OG 94 (December 28, 1993) (see 37 C.F.R. ' 1.6(d)). The official fax telephone number for the Group is 571-273-8300. NOTE: If Applicant does submit a paper by fax, the original signed copy should be retained by applicant or applicant's representative. NO DUPLICATE COPIES SHOULD BE SUBMITTED so as to avoid the processing of duplicate papers in the Office.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jane Zara whose telephone number is (571) 272-0765. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Douglas Schultz, can be reached on (571) 272-0763. Any inquiry of

a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0196.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jane Zara
6-3-08

/Jane Zara/
Primary Examiner, Art Unit 1635